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TITLE: Electronic apparatus with **notification** function, using recording medium which stores apparatus control program - has **notification** controller that decides **modality of notification** output based on **priority of notification** factor and **priority** of users content of action

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INT-CL (IPC): H04M001/00, H04Q007/14 , H04Q007/38

ABSTRACTED-PUB-NO: JP 11046377A

BASIC-ABSTRACT:

NOVELTY - A **notification** controller decides the **modality of the notification** output based on the **priority of a notification** factor and the **priority** of a user's content of action. An action identification unit (24) identifies a user's content of action when the **notification** factor occurs. DETAILED DESCRIPTION - The **priority of a notification** demand output by a **notification** demand **generator** (26) to a **notification** output unit (28) is obtained corresponding to a **notification** schedule file (30). A factor identification unit (27) performs the identification of the **notification** factor having occurred. INDEPENDENT CLAIMS are included for the following:recording medium; and **notification** procedure.

USE - None given.

ADVANTAGE - Prevents **generation** of setting leakage of **notification** output nor

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modification leakage since user is notified by procedure suitable for a user's situation or surrounding environment even if user forgot to select the **notification** output for every time zone and every action schedule, thus reliably obtaining suitable **notification** output. DESCRIPTION OF DRAWING(S) - The figure shows the system block diagram of the electronic apparatus. (24) Action identification unit; (26) **Notification** demand **generator**; (27) Factor identification unit; (28) **Notification** output unit; (30) **Notification** schedule file.

CHOSEN-DRAWING: Dwg.3/14

TITLE-TERMS: ELECTRONIC APPARATUS **NOTIFICATION** FUNCTION RECORD MEDIUM STORAGE
APPARATUS CONTROL PROGRAM **NOTIFICATION** CONTROL DECIDE **NOTIFICATION**
OUTPUT BASED PRIORITY **NOTIFICATION** FACTOR PRIORITY USER CONTENT ACTION

DERWENT-CLASS: W01 W05

EPI-CODES: W01-B05; W01-B05A; W01-C01; W05-A05C;

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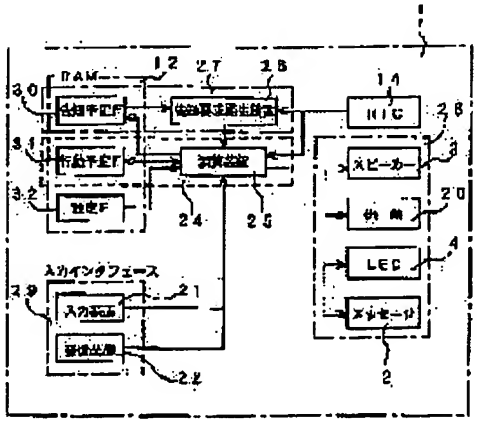
(54) ELECTRONIC DEVICE, NOTICE METHOD AND RECORDING MEDIUM RECORDING CONTROL PROGRAM OF THE ELECTRONIC DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an electronic device, from which a notice output in matching with a surrounding environment without consciously setting the kind of notice output by the user.

SOLUTION: An arithmetic unit 25 calculates the priority of a notice request issued by a notice request generator 26, based on a notice schedule file 30 and the priority of behavior contents of the user identified based on a action schedule file 31 and instructs a selected notice output as a result to a notice output section 28, from which plural notice outputs are obtained such as a loud speaker 3, a vibrator 20, an LED 4, a blinked message 2, and the instructed notice output is given to the user. As a result, in the case that a conventional schedule information is set to the behavior schedule file 31, since a notice output suitable for the behavior content and the notice contents is obtained automatically, the user receives surely notice in a method which matches with a surrounding environment.



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2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1] The electronic instrument carry out having the notice control section which can determine the class of notice output based on the identifiable action discernment section, the priority of a notice factor, and the priority of the contents of action in the contents of action of the user when the identifiable factor discernment section and a notice factor generating the notice output section from which two or more notice outputs from which a class differs are obtained, and that the notice factor occurred as the description.
[Claim 2] the time check the time of day when a notice factor generating can distinguish in claim 1 -- the electronic instrument carry out having had the section, said action discernment section being equipped with the action schedule storage section memorizable at least for a user's action schedule and schedule time of day, and said notice control section carrying out the action schedule of time of day which the notice factor generated as the contents of action, and determining the class of notice output as the description.
[Claim 3] The electronic instrument characterized by having the input interface section which can be set up for an action schedule through a manual or a receive section in said action schedule storage section in claim 2.
[Claim 4] It is the electronic instrument characterized by equipping said factor discernment section with the notice schedule storage section memorizable at least for a notice factor and notice time of day in claim 1.
[Claim 5] It is the electronic instrument characterized by equipping said factor discernment section with the receive section which can receive a notice factor in claim 1.
[Claim 6] It is the electronic instrument characterized by the ability to distinguish the information which shows the priority by which said notice control section is contained in a notice factor in claim 1.
[Claim 7] The notice approach carried out [having the notice control process of determining the class of notice output outputted based on the factor discernment process of identifying the notice factor having occurred, the action discernment process of identifying the contents of action of a user when a notice factor occurs, the priority of a notice factor, and the priority of the contents of action, and] as the description.
[Claim 8] The notice approach characterized by having the schedule discernment process of identifying a user's contents of action based on the time of day discriminated from a user's action schedule beforehand remembered to be the process which identifies the time of day when the notice factor occurred at said action discernment process in claim 7.
[Claim 9] The notice approach characterized by generating a factor at said factor discernment process in claim 7 based on the notice factor and notice time of day which were memorized beforehand.
[Claim 10] The notice approach characterized by receiving a notice factor at said factor discernment process in claim 7.
[Claim 11] The notice approach characterized by the ability to distinguish the information which shows the priority included in a notice factor at said notice control process in claim 7.

[Claim 12] Factor discernment processing in which are the record medium which recorded the control program of the electronic instrument equipped with two or more notice outputs from which a class differs, and it identifies that the notice factor occurred, The record medium carried out [that the control program which it has in the instruction which can perform notice control processing in which the class of action discernment processing in which the contents of action of a user when a notice factor occurs are identified, and notice output outputted based on the priority of a notice factor and the priority of the contents of action is determined is recorded, and] as the description.
[Claim 13] The record medium carry out that the control program which it has in the instruction which can perform schedule discernment processing in which said action discernment processing identifies a user's contents of action in claim 12 based on the time of day discriminated from a user's action schedule beforehand remembered to be the processing which identifies the time of day when the notice factor occurred is recorded as the description.
[Claim 14] The record medium which carries out the description of the control program which has the instruction which can perform processing said whose factor discernment processing generates a factor in claim 12 based on the notice factor and notice time of day which were memorized beforehand being recorded.
[Claim 15] The record medium characterized by recording the control program which has the instruction said whose factor discernment processing can perform processing which receives a notice factor in claim 12.
[Claim 16] The record medium characterized by recording the control program with which said notice control processing is characterized by having the instruction which can perform processing which distinguishes the information which shows the priority included in a notice factor in claim 12.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the electronic instrument equipped with some notice means and the notice approach, and the record medium with which the control program which controls the electronic instrument further was recorded.
[0002]
[Description of the Prior Art] The clock with an alarm function is equipped with the timer function which notifies a user of it being predetermined time of day when an alarm will become if it becomes a certain time amount, or the device itself vibrates. Moreover, if a certain information is received or a telephone call is got, **-JA and a cellular phone are equipped with the notice function to tell a user about that there is data reception or a telephone call, when an alarm becomes or the device itself vibrates.
[0003]
[Problem(s) to be Solved by the Invention] Although such a notice function is an important thing by which the electronic instrument of the above pocket molds is characterized, for a user, there is a time of not wanting alarms, such as a bell, to sound during a meeting etc. It is, also when I want you for a bell to surely ring on the other hand when it is in a house, and to call. In the current electronic instrument, a user turns OFF an alarm function or has set up the notice output from which classes, such as a call by the sound and a call by vibration, differ by the manual according to a situation on that occasion. Moreover, specifying a notice output in a time zone is also considered.
[0004] however, if the user forgets the setup even if it can change a notice output by these approaches, a not suitable notice output will obtain in a situation on that occasion -- having -- a user -- he not only feels unpleasant, but will make surrounding men trouble. Specifying the class of notice output as a word according to a user's schedule only for specifying a notice output so may forget modification, when it was a troublesome activity, and you have forgotten assignment or a schedule is changed about the class of notice output further.
[0005] Moreover, since the always same notice output is chosen to two or more notice factors from which a class differs even if it specifies the notice output of a certain time zone suitably, selection suitable for a user's hope cannot necessarily be performed. For example, if it has set during a meeting so that it may not become about an alarm, and it sets, no matter what urgent notice factor may occur, an alarm will not become. Moreover, in the transmitting side of a message, although there is a message I want you to see when there has been free time amount, and there is a message of wanting you to see immediately now, since it will opt for a notice output only on account of a receiving side, a thought (intention) of a transmitting side cannot be reflected by the present device.
[0006] Then, in this invention, even if a user does not choose the class of notice output intentionally, it aims at offering the electronic instrument and the notice approach that the suitable notice output suitable for a surrounding environment etc. is obtained, and the record medium, with which the control program of an electronic instrument was recorded further. Moreover, a notice output is not set up uniformly but it

aims at offering the flexible electronic instrument and the flexible notice approach a suitable notice output is chosen by the notice factor, and the record medium, with which the control program was recorded further.

[0007]

[Means for Solving the Problem] For this reason, the contents of action of a user when a notice factor occurs are identified, and the location in which a user is present, and the notice factor enable it to supply further the notice output which was suitable on that occasion in this invention based on a notice factor, a priority, and the priority of the contents of action. That is, the electronic instrument of this invention is carrying out having the notice control section which can determine the class of notice output based on the identifiable action discernment section, the priority of a notice factor, and the priority of the contents of action in the notice output section from which two or more notice outputs from which a class differs are obtained, and the contents of action of the user when the identifiable factor discernment section and a notice factor generating that the notice factor occurred as the description. Moreover, it is carrying out having the notice control process of determining the class of notice output outputted based on the factor discernment process of identifying the notice factor having generated the notice approach of this invention, the action discernment process of identifying the contents of action of a user when a notice factor occurs, the priority of a notice factor, and the priority of the contents of action as the description. And factor discernment processing in which it identifies that could offer this notice approach as a control program of the electronic instrument equipped with two or more notice outputs from which a class differs, and the notice factor occurred, Action discernment processing in which the contents of action of a user when a notice factor occurs are identified, As a control program which has the instruction which can perform notice control processing in which the class of notice output outputted based on the priority of a notice factor and the priority of the contents of action is determined, it records on record media, such as a magnetic disk, an optical disk, or ROM, and can provide.

[0008] In the electronic instrument and the notice approach of this invention, since the contents of action of a user when a notice factor occurs are identified automatically and it enables it to determine the class of notice output based on it, even if a user is not conscious, the notice output suitable for the contents of action and.the spot is obtained. Furthermore, since a priority is set as each of a notice factor and the contents of action and it can opt for a notice output based on these, irrespective of a notice factor, a notice output is not set up uniformly and the notice output also corresponding to a notice factor is obtained.

[0009] The location in which users, such as a conference room, a user's sitting-room, or a house, are is identified automatically, and the contents of action can also judge it. moreover, the time check which can distinguish time of day when a notice factor occurs -- it is also possible to identify a user's contents of action based on the action schedule which prepared the section, considered as a schedule file or a schedule database equipped with a user's action schedule and schedule time of day at least, and was set up beforehand (record). By enabling it to grasp the contents of action based on data (information) used for applications, such as schedule management called an action schedule, such as a file and a database, other devices and the same data as a function are sharable. Therefore, only in order to choose a notice output, the time and effort which inputs data can be saved, and the situation of forgetting setting **** for a notice output, or forgetting to change a setup can also be prevented.

[0010] Furthermore, the user itself may set an action schedule to the action schedule storage sections, such as such a schedule file and a schedule database, by the manual, and the input interface section may be prepared in them so that an action schedule can be set up from others, such as other devices, such as a personal computer, and a secretary.

[0011] Moreover, beforehand, a notice factor and generating schedule time of day (notice time of day) may be based on the schedule memorized at least, and receive the notice factor to generate like a message.

[0012] Furthermore, it is also possible to distinguish information, such as a keyword which shows the priority included in a notice factor, and to opt for a notice output, and the notice output reflecting the intention of a transmitting side included in the message etc. can be obtained.

[0013]
[Embodiment of the Invention] Hereafter, the operation gestalt of this invention is explained based on a drawing.
[0014] (Gestalt of the 1st operation) The outline of the electronic instrument 1 of the wrist watch mold which equipped drawing 1 with the schedule function and notice function concerning this invention is shown. The electronic instrument 1 of this example is equipped with the emitter (LED) 4 which can use the liquid crystal display object (LCD) 2 which can display time of day, a message, etc. on a body 5, and the alarm sound (buzzer) of two kinds of size as a warning lamp with the loudspeaker 3 in which an output is possible. Furthermore, the motor for vibration is built in the body 5, and body 5 self can be vibrated now. Therefore, flashing of alarm Tokyo College of Music, vibration, alarm ****, and a display and five kinds of different notice outputs of LED are possible for the electronic instrument 1 of this example, and it can choose these either.
[0015] The hardware configuration of the outline of the electronic instrument 1 of this example is shown in drawing 2 . The electronic instrument 1 is equipped with the internal bus 17 which connects the LCD interface 16 and them which perform control of ROM11 in which the program is stored, RAM12 which data and the set point can keep as a file etc., CPU13 which performs a program and processes data, the real time clock (RTC) 14 which can read current time, the I/O-hardware-control circuit 15 which controls various I/O, and LCD2. The receiving set 22 which can receive data is further connected with the buzzer (alarm) generating section 18 which performs a notice output, the LED control section 19, the motor control section 20 for vibration, and the input devices 21, such as a touch panel by which the laminating was carried out to LCD2, through wireless or a network in the I/O-hardware-control circuit 15. Further, the external instrument connection interface 23 can be connected to the I/O-hardware-control circuit 15 if needed, and the escape of a function can be aimed at in it.
[0016] A block diagram is used and the system configuration of the outline of the electronic instrument 1 of this example is shown in drawing 3 . An electronic instrument 1 has an identifiable arithmetic unit 25 in a user's action based on the action schedule (a schedule) set as the notice demand generator 26 which can generate a notice demand, and the action schedule file 31 of memory 12 based on the notice schedule set as the notice output section 28 from which the notice output from which the class of the flashing 2 of a loudspeaker 3, vibration 20, LED4, and a message differs is obtained, and the notice schedule file 30 of memory 12. Therefore, the electronic instrument 1 of this example is equipped with the factor discernment section 27 which is equipped with the action discernment section 24 equipped with the arithmetic unit 25 and the action schedule file 31, and was equipped with the notice demand generator 26 and the notice schedule file 30. While an arithmetic unit 25 checks further the time of day of the notice demand generated from the notice demand generator 26 by RTC14 and identifies the action of the user at that time, in it, the function as a notice control section which chooses and outputs one notice output of the notice output sections 28 based on the priority of a notice demand and the priority of the contents of action also has. Furthermore, the arithmetic unit 25 received the input of a notice schedule or an action schedule from input interfaces, such as an input unit 21 or a receiving set 22, and is equipped also with the function which updates the notice schedule file 30 and the action schedule file 31 together with the conditions set as the configuration file 32 in the contents.
[0017] An example of contents configuration-file of action 32a of the configuration files 32 is shown in drawing 4 . The class of notice output chosen with the value which applied the priority of the contents of a notice to a user's contents of action and priority of the contents of action, and the priority of the contents of action is specified in this contents configuration-file of action 32a. For example, the priority of a meeting is 1, if the priority of the contents of a notice and the calculated result are pluses, alarm Tokyo College of Music will be determined as a notice output, and at the time of 0, at vibration and the time of -1, it is set up at alarm **** and the time of -2 so that flashing of a display may be chosen, respectively.
[0018] An example of contents configuration-file of notice 32b of the configuration files 32 is shown in drawing 5 . The contents of a notice (purpose) and the priority of that notice are set as this contents configuration-file of notice 32b. For example, in the notice before schedule initiation, the priority is the

priority of the contents, and as the notice before initiation of a presentation was shown in drawing 4 , the same priority "2" as a presentation is applied. Similarly, a priority "1" is applied and, as for the notice before initiation of a meeting, default "0" is applied to the other notices before initiation. Moreover, a priority is low and the time signal is set as "-2." The contents of these configuration files 32 can set up now the class of notice output which can set up a user, a dealer, etc. now through the input interface 29, and was suitable for a user's environment or liking.

[0019] An example of the action schedule file 31 is shown in drawing 6 . The data for notice processing of the flag which shows the data of schedule relation manageable [with common schedule pipe ** software, such as start time, end time (it is easy to be natural also at start time and a duration), and the contents of action,] and the existence of the need of outputting the priority and alarm of the contents of action are set to the action schedule file 31. Schedule-related data are other applications, such as schedule pipe ** software, and data which can be used in common. Thus, since the troublesomeness of an input can be prevented and modification of a schedule etc. is automatically reflected by enabling common use of schedule-related data, a user's action schedule can be grasped exactly. Furthermore, it enables it to have received schedule-related data from a personal computer, other information processors, etc. through wireless, a network, or other interfaces in the electronic instrument 1 of this example through the receiving set 22. therefore, the user who has managed the schedule of self [a personal computer] -- or even if it is the user who has left schedule pipe ** to others, such as a secretary, those schedule information can be used.

[0020] On the other hand, the data for notice processing of the action schedule file 31 can be set automatically now based on the data inputted with schedule pipe ** software etc. For example, if the schedule of "arrange" will be inputted from schedule pipe ** software from 10:00 to 12:00, a priority will be set up based on the action schedule "arrange." Since it is not specially shown in the contents configuration file of action which showed "arrange" to drawing 4 , default 0 is set up. And "1" which shows that a notice output is performed is set to the column which shows the existence of an alarm as a default. Thus, since the data for notice processing are generated automatically from schedule information, a user can prevent beforehand that a modification mistake, the leakage in modification, etc. occur while he does not need to create the data for notice processing and can save time and effort. Of course, the contents of the priority of each contents of action and the action schedule files 31, such as decision of whether to take out a notice output (alarm), can be changed according to a user's liking and situation by the manual.

[0021] An example of the notice schedule file 30 is shown in drawing 7 . The priority of the time of day (notice time of day) which generates a notice factor, a notice factor, and its notice factor etc. is memorized by the notice schedule file 30. And in the electronic instrument 1 of this example, a priority is automatically set up based on contents configuration-file of notice 32b according to a notice factor. For example, as for the time signal at 13:00, a priority is recorded on the notice schedule file 30 as -2 from contents configuration-file of notice 32b. Therefore, that a user should just set up the purpose which needs a notice, and its time of day, even if it does not waver especially in the class of notice output, it opts for a suitable notice output from the priority set up according to the notice factor, and the priority of the contents of action when the notice factor occurs. It is possible to also set up the notice time of day and the purpose (the contents of a notice) of this notice schedule file 30 as well as the action schedule file 31 from the outside through a receiving set 22. Moreover, it is possible to change the priority set automatically by this notice schedule file 30 as well as the above-mentioned action schedule file 31 by the manual for every notice schedule. The notice schedule file 30 needs to know according to which contents the alarm demand occurred, when an alarm demand (notice demand) occurs. Therefore, the order by which an alarm is carried out needs to sort. In addition, when preparing an alarm set flag (the flag of the event by which the alarm set is carried out is set to a timer, and it resets except it), or adding an alarm number to each event and carrying out an alarm set at a timer, it is possible to memorize an alarm number.

[0022] The flow chart has shown the outline processing which sets the data for a notice as the electronic instrument 1 of this example at drawing 8 . First, data called the start time relevant to a schedule, the end

time (duration), and the contents of action of the action schedule file 31 are inputted at a step ST 1. The priority of the contents of action which could come, and boiled, then were inputted at a step ST 2 is inputted. In this example, a priority is set automatically with reference to contents configuration-file of action 32a by the contents of action inputted at a step ST 1. the time of the user who the alternative other than the setting approach that such contents of action itself show a priority (presentation = the maximum importance and meeting = **** etc.) is prepared [user], and makes a user choose inputting a priority numerically etc., or inputting the contents of action beforehand, "!! " " -- maximum important" etc. -- the keyword which shows a priority is inserted and how to judge this with an arithmetic unit 25 and to set up a priority etc. can be considered.

[0023] Next, the necessity of an alarm (notice output) is set in a step ST 3. What is necessary is to set "1" which shows an alarm important point by the default, and to come to change the necessity of an alarm at a step ST 3 in this example, only when an alarm is not required. If the necessity of an alarm is determined at a step ST. 3, since schedule-related information and notice-related information will be ready, the contents are recorded on the action schedule file 31.

[0024] In the electronic instrument 1 of this example, the set of the notice before initiation relevant to the action schedule has come be made following a setup of an action schedule. First, enquiry with the notice before initiation required of a step ST 4 is held. If there is a demand of the notice before initiation, the information on the schedule relation inputted at the front step by the step ST 5 (start time and contents) will be set to the notice schedule file 30. At this time, based on contents configuration-file of notice 32b, automatic selection is made and the priority by the contents of a notice is recorded on the notice schedule file 30. Next, in a step ST 6, notice time of day is set up before start time, or an inquiry of no is taken out, and when it desires a notice before start time, the time of day or the time amount before initiation (for example, ten quotas) is inputted at a step ST 7. The set of the notice before initiation of the action planned by this at the action schedule file 31 is completed.

[0025] An example of processing in case the electronic instrument 1 of this example carries out a notice output is shown in drawing 9 . First, it judges whether the notice schedule file 30 has a notice demand at a step ST 11. When there is a notice demand, the contents (notice time of day, the contents of a notice, and priority) of the notice are acquired from a notice schedule file at a step ST 12. And it waits to be in agreement with the present time of day when notice time of day is obtained from RTC at a step ST 13. Notice time of day and the present time of day are in agreement, and if it is identified in the factor discernment section 27 that the notice factor occurred, it will acquire the contents of action of the user at that time from the action schedule file 31 at a step ST 14, and will identify a user's contents of action in the action discernment section 24. And in a step ST 15, an arithmetic unit 25 determines the class of notice output in quest of the sum of the priority of the contents of a notice, and the priority of the contents of action. Furthermore, a means to output the notice output for which it opted at the step ST 15 of the notice output section 28 in a step ST 16 is operated, and it notifies to a user.

[0026] The approach of setting the contents of a notice shown with the flow chart of drawing 8 and drawing 9 and the approach of notifying can be provided as a control program which controls the electronic instrument 1 of this example. The control program which performs notice processing is contained to ROM11, to suitable timing, can be loaded to CPU13 and can be worked. Moreover, the control program is possible also for recording on other record media, such as a floppy disk and CD-ROM, and providing, and can be installed in the electronic instrument 1 of a wrist watch mold via a personal computer etc.

[0027] Next, it explains how a notice is performed in the electronic instrument 1 with which the contents of action shown in drawing 6 and drawing 7 and the contents of a notice were set. If the present time of day of an electronic instrument 1 will become, the notice factor (the specified time of day is notified) which will tell lunch at 11:55 every day will occur. The contents of action at 11:55 of the present time of day when this notice factor occurred are "arranging" from the contents of the action schedule file 31. Therefore, the priority -1 as which an arithmetic unit 25 determines a notice output from the priority 0 by the priority -1 and schedule database about the contents of a notice demand "about which it arranges" (here, classified in addition to this) is drawn. And if it compares with the priority of the notice

output of contents configuration-file of action 32a, it will opt for "vibration" as a notice output, and a vibrating motor 20 will work.
[0028] Next, if 12:00 come, the notice demand of the time signal for every time of **** will occur. The time of day when this notice factor occurs is 12. It is at the time and the schedule of that time of day serves as "lunch." Therefore, the contents of a notice of the priority of a "time signal" are -2, as for the priority which chooses a notice output since other priorities are 0, the contents of action are set to -2, and "alarm **** (PITSU)" is chosen. Moreover, if 13:00 come, the notice demand of the time signal for every time of **** will occur, and the action schedule of the time of day will be "holding a conference." The priority of the "time signal" of a notice demand is -2, and since the priority of the contents of action is 1, the priority which opts for a notice output is set to -1, and since the contents of action are meetings, "alarm **** (PITSU)" is chosen as a notice output. The same is said of the time signal at 14:00.
[0029] Furthermore, if it will become, the notice factor by the notice before schedule initiation of which initiation 10 quota of the "presentation" which starts at 15:00 is notified will occur. It will be the time of day when this notice factor occurs at 14:50, and the action schedule at that time is "a meeting." In the usual notice demand, although the notice output according to "alarm Tokyo College of Music" in under a meeting is not chosen, since the following business is an important presentation, a priority is set with 2 (the priority of the contents of action of the presentation which is a degree is 2). Therefore, the priority which opts for a notice output is added by 3, and "alarm Tokyo College of Music" is chosen from contents configuration-file of action 32a as a notice output. Furthermore, supposing it was set so that the notice demand (priority -1) by the timer might occur when a presentation was started and 30 minutes passed, although not illustrated The time of day when this notice factor occurs is temporarily set to 15:35, since the contents of action at that time are "presentations" (priority 2), the priority of the notice demand by the timer is set to +1, and "alarm ****" is chosen as a notice output.
[0030] Thus, in the electronic instrument 1 of this example, a suitable notice output is automatically determined by a notice factor and the contents of action of the user at that time. Therefore, the existence of a notice can be exactly told to a user with the notice output suitable for the user's contents of action and contents of a notice.
[0031] (Gestalt of the 2nd operation) The outline of the electronic instrument 51 of the pager mold which equipped drawing 10 with the schedule function and notice function concerning this invention is shown. The electronic instrument 51 of this example is equipped with the emitter (LED) 4 which can use the liquid crystal display object (LCD) 2 which can display the message received by the body 52, and the alarm sound (buzzer) of two kinds of size as a warning lamp with the loudspeaker 3 in which an output is possible. Furthermore, the motor for vibration is built in the body 52, and body 52 self can be vibrated now. Therefore, flashing of alarm Tokyo College of Music, vibration, alarm ****, and a display and five kinds of different notice outputs of LED are possible also for the electronic instrument 51 of this example, and these either can be chosen. the electronic instrument 1 of this example -- "reschedule meeting 2:00 [!!]" 55a -- or -- "-- maximum important: -- return immediately -- the keyword "!!" contained in a message when the message (notice factor)"55b is received -- or -- "-- it tells having judged maximum important", having set up the priority of a notice factor, having calculated with the priority of the contents of action of the user when receiving a message, and having received the message with the suitable notice output.
[0032] The hardware configuration of the outline of the electronic instrument 1 of this example is shown in drawing 11. The electronic instrument 51 is equipped with the internal bus 17 which connects the LCD interface 16 and them which perform control of ROM11 in which the program is stored, RAM12 which data and the set point can keep as a file etc., CPU13 which performs a program and processes data, the real time clock (RTC) 14 which can read current time, the I/O-hardware-control circuit 15 which controls various I/O, and LCD2. The external input equipment 53 which can input data is further connected with the buzzer (alarm) generating section 18 which performs a notice output, the LED control section 19, the motor control section 20 for vibration, and the input units 21, such as a touch panel by which the laminating was carried out to LCD2, through external inputs, such as a network and an infrared interface, in the I/O-hardware-control circuit 15. Furthermore, the RF receive section which

can receive a message, and the wireless receive section 56 having a signal detecting element are connected to CPU13 through wireless, the message transmitted through an antenna 57 is received, and it can display now on LCD2.

[0033] A block diagram is used and the system configuration of the outline of the electronic instrument 51 of this example is shown in drawing 12 . The electronic instrument 51 has the identifiable arithmetic unit 25 in a user's action based on the notice output section 28 from which the notice output from which the class of the flashing 2 of a loudspeaker 3, vibration 20, LED4, and a message differs is obtained, and the action schedule (schedule) which received the message through wireless and was set as the data sink 59 which can generate a notice demand, and the action schedule file 31 of memory 12. Therefore, the electronic instrument 51 of this example is equipped with an arithmetic unit 25, the action discernment section 24 equipped with the action schedule file 31, and the factor discernment section 27 equipped with the data sink 59. And an arithmetic unit 25 is equipped also with the function as a notice control section which chooses and outputs one notice output of the notice output sections 28 based on the priority of a message, and the priority of the contents of action while it checks the time of day of the notice demand (the message was received) generated from the data sink 59 by RTC14 and identifies the action of the user at that time. Moreover, the arithmetic unit 25 received the input of a notice schedule or an action schedule from the input unit 21 or the input interface of an external input 58, and is equipped also with the function which updates the action schedule file 31 together with the conditions set as the configuration file 32 in the contents. Therefore, the direct input of the action schedule (schedule) can also be carried out, and it can be inputted from an external device using means of communications, such as infrared ray communication. In a schedule, start time, end time, and business (the contents of action) can be inputted. Or it is also possible to set up to notice output [which he wishes in a time zone]. The notice output related with business (the contents of action) by contents configuration-file of action 32a shown in drawing 4 when the means or approach of a notice output was not chosen is chosen as a default, and when there is no keyword which shows a priority to a message side, the notice output of a priority 0 is set up. Thereby, "a notice according [the time of a meeting] to vibration" etc. is set up as a default.

[0034] The flow chart has shown an example of processing of the electronic instrument 51 of this example to drawing 13 . First, since the notice factor occurred by this when the data sink 59 received data (message) at a step ST 51, an arithmetic unit 25 acquires the time-of-day data from RTC14 at a step ST 52. The message which received is temporarily stored in RAM12, and when required, it can refer to at any time. Next, the schedule data with which an arithmetic unit 25 corresponds to the time of day of the action schedule file 31 at a step ST 53 are acquired, and when there are no schedule data, a default is specified at a step ST 54. In this example, the case where the contents of action of contents configuration-file of action 32a shown in drawing 4 are others can be used as a default, for example.

[0035] When schedule data are in the received time of day, the contents of the action schedule are set up as contents of action, the urgency (priority) by which the arithmetic unit 25 was contained in received data at a step ST 55, and the priority of schedule data (the contents of action) are calculated, and the class of notice output is determined. Decision of a notice output tells that outputted the notice output at a step ST 56, and the message arrived at the user.

[0036] the priority of a message -- for example, "!!" -- the maximum importance -- "-- ! -- " -- importance -- "-- ! -- nothing" -- usually -- ** -- by performing a keyword setup to say, into a message, a transmitting side can use a keyword, can set up a priority, and can send to an electronic instrument 51. or the inside of a message -- "-- it is also possible for a priority to be shown by putting in as a keyword the character string of maximum important being" and "it being important." Such a keyword can be decoded using an arithmetic unit 25. in addition -- "-- maximum important" and important ["important"] -- "-- usually -- " -- ** -- although divided into the three-stage to say, as for the phase of a priority, four or more are natural by using a figure etc. -- it is possible. Moreover, without changing the present pager system by inserting into a message the keyword which shows a priority in this way, the priority of a notice factor can be set up and the intention about the urgency of a transmitting side can be conveyed with a message. Moreover, it is also possible by creating a priority association table to associate

immediately the priority of the contents in which "!!" and "maximum important" are contained, and to carry out it.

[0037] The action schedule shown in drawing 6 is set as the electronic instrument 51 of this example, and the processing in the case of having the configuration file 32 of the contents shown in drawing 14 is explained to an example. Now, suppose that the electronic instrument 51 received the data "give a telephone" at 13:30. Received data are data [usually / (priority 0)] which do not contain the keyword which shows a priority, and since the action schedule at that time is "a meeting", as for a notice output, "vibration" is chosen. The data "modification (urgent) of presentation time amount" were received at 13:40. This is the emergency message of a priority 1, and since a schedule is "a meeting", as for a notice output, a "alarm" is chosen. Moreover, the data from the subordinate of "returning previously" were received at 15:30. Received data are the usual data, and since the action schedule at that time is called "presentation", as for a notice output, "LED" is chosen. Furthermore, the data "modification (urgent) of tomorrow's meeting time amount" were received at 15:40. Since an action schedule is a "presentation", a notice output has "vibration" chosen although this is the emergency message of a priority 1.

[0038] Also in the electronic instrument 1 of this example, those who are controlling themselves the schedule with which schedule data required for the action schedule file 31 were indicated enter, and there are those who have left schedule pipe ** to the secretary. Therefore, the electronic instrument 51 of this example can also utilize the schedule data with which other persons also created the schedule data which prepared the external input 58, and enabled it to transmit schedule data, and the user has managed by the external device.

[0039] Thus, if the electronic instrument and the notice approach of this example are used, when performing the notice corresponding to a notice demand out of two or more notice outputs, such as flashing of an alarm, vibration, LED, or a message, the notice output doubled with the contents of a notice and a user's contents of action is chosen automatically. Therefore, the not the best notice output can be generated, it is not necessary to make trouble to a perimeter, and, on the other hand, a notice can be certainly transmitted to a user. Furthermore, since it enables it to discriminate a user's contents of action from an action schedule, it can opt for the notice output which was suitable for a user's situation, without doing the troublesome activity of it being possible to make the usual schedule data, such as a meeting and an arrangement, serve a double purpose, and specifying a notice output. Moreover, since the priority relevant to the contents of a notice and the priority relevant to the contents of action can be set up, the notice output which corresponded to each contents flexibly is obtained. Therefore, it can be delivered that it can transmit clearly, and an unimportant notice does not become obstructive to a user's action, and an important notice does not require trouble for a perimeter, without specifying a notice output uniformly. In case a notice is especially emitted in response to the message from others, it is possible to set a priority as a message by a keyword etc., and the notice output in which an addresser's intention was reflected can be obtained. Therefore, since a notice is performed with the notice output according to a request of an addresser, considering a surrounding situation, a message can be transmitted quickly and certainly to an addressee (user).

[0040] In addition, of course, it is not what passes over file format, data format, a priority, etc. which were shown above to instantiation, and is limited to these. Moreover, it is possible for the calculation approach of a priority of opting for a notice output not to be limited to this example, either, and to set suitably by relation with the contents of a setting of a configuration file etc. Moreover, although he is trying to identify the contents of action using the schedule data prepared for the action schedule file, it is possible to detect the location in which a user is present using GPS or other discernment functions, and to grasp the contents of action etc.

[0041]

[Effect of the Invention] As stated above, by using the electronic instrument of this invention and the notice approach, and the record medium that recorded the control program of an electronic instrument further, a user's action schedule etc. can be identified and a notice output can be chosen with the priority of the contents of action, and the priority of a notice demand. Therefore, even if especially a user does not choose a notice output specially intentionally for every time zone and every action schedule, it can

notify by the approach suitable for a user's situation or a surrounding environment. For this reason, the leakage in a setting or the leakage in modification of a notice output do not arise, and a suitable notice output can be obtained certainly.

[0042] Moreover, by using an action schedule for discernment of the contents of action, it is possible to make the usual schedule data serve a double purpose, and the time and effort which sets up a notice output can be saved. Moreover, since it opts for the occasional notice output automatically by inputting the action schedule beforehand or changing an action schedule, it is not necessary to change a notice output oneself and to feel unpleasant. Moreover, since the modification is reflected even when an action schedule is changed, forgetting a setup of a notice output can also be prevented.

[0043] Furthermore, the electronic instrument of this invention can accept schedule information also from electronic equipment other than electronic instruments with a notice function, such as a personal computer and an electronic notebook, by forming the external input or receiving set whose file transfer etc. is possible. Thereby, management of a notice output is possible also for the user who is performing schedule pipe ** with other equipments based on the schedule data, and schedule information can be utilized effectively. moreover, users, such as a secretary, -- him -- the schedule database which the man of an except created can also be used.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is drawing showing typically the outline of the electronic instrument of the gestalt of operation of the 1st of this invention.
[Drawing 2] It is drawing showing the outline configuration of the hardware of the electronic instrument shown in drawing 1 .
[Drawing 3] It is the block diagram showing the outline of the system configuration of the electronic instrument shown in drawing 1 .
[Drawing 4] It is drawing showing the outline of the contents configuration file of action.
[Drawing 5] It is drawing showing the outline of the contents configuration file of a notice.
[Drawing 6] It is drawing showing the outline of an action schedule file.
[Drawing 7] It is drawing showing the outline of a notice schedule file.
[Drawing 8] It is the flow chart which shows the outline of processing of inputting the action schedule of the electronic instrument shown in drawing 1 .
[Drawing 9] It is the flow chart which shows the outline of processing of performing the notice output of the electronic instrument shown in drawing 1 .
[Drawing 10] It is drawing showing typically the outline of the electronic instrument concerning the gestalt of operation of the 2nd of this invention.
[Drawing 11] It is drawing showing the outline configuration of the hardware of the electronic instrument shown in drawing 10 .
[Drawing 12] It is the block diagram showing the outline of the system configuration of the electronic instrument shown in drawing 10 .
[Drawing 13] It is the flow chart which shows the outline of processing of performing the notice output of the electronic instrument shown in drawing 10 .
[Drawing 14] It is drawing showing the outline of a configuration file.
[Description of Notations]
1 51 Electronic instrument with a notice function
2 LCD
3 Loudspeaker
4 LED
5 52 Body
14 RTC
24 Action Discernment Section
25 Arithmetic Unit
26 Notice Demand Generator
28 Notice Output Section
27 Factor Discernment Section
29 Input Interface Section
30 Notice Schedule File

31 Action Schedule File
32a The contents configuration file of action
32b The contents configuration file of a notice

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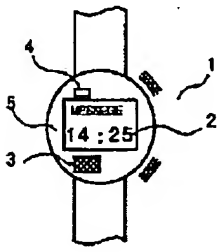
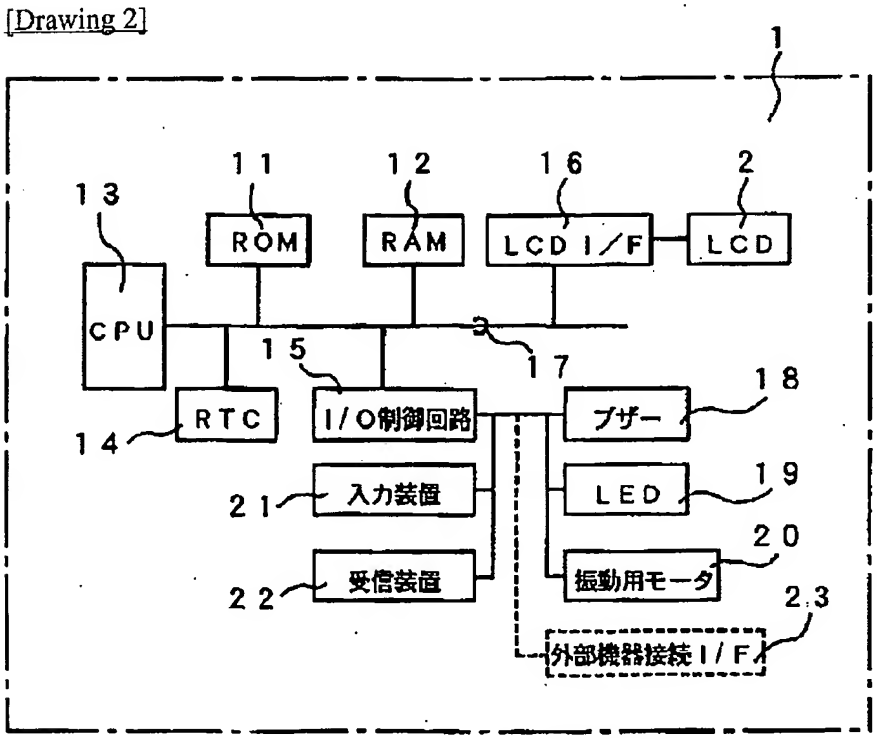
DRAWINGS

[Drawing 1]



[Drawing 2]



[Drawing 4]

32a

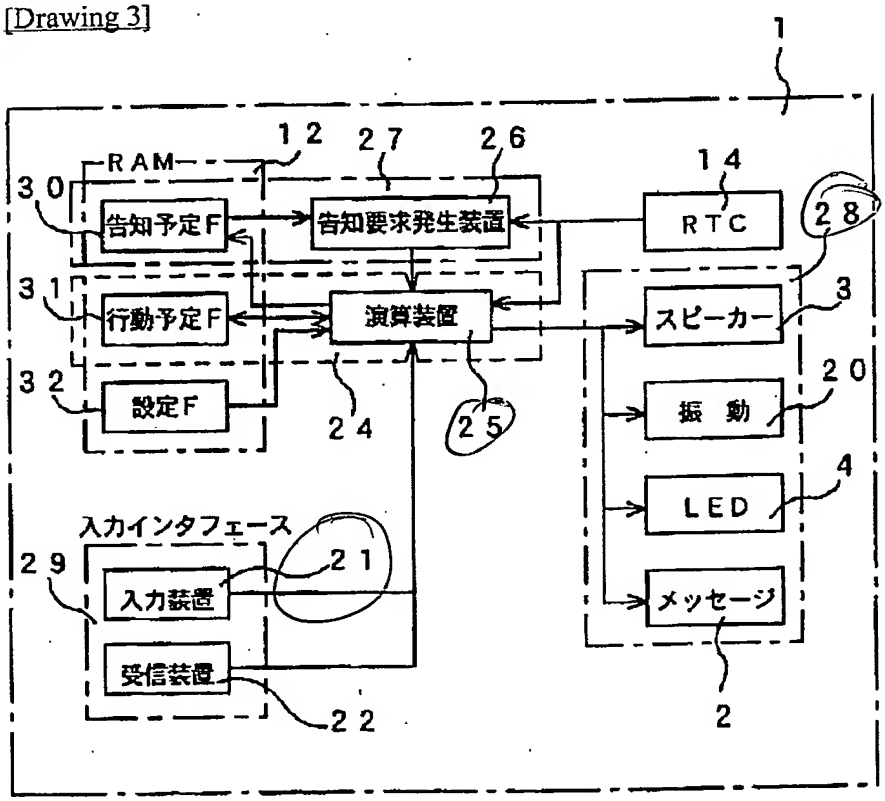
行動内容	優先度	＋	0	－1	－2
プレゼンテーション	2	振動	アラーム音小	表示の点滅	表示の点滅
会　議	1	アラーム音大	振動	アラーム音小	表示の点滅
その他(デフォルト)	0	アラーム音大	アラーム音大	振動	アラーム音小

[Drawing 5]

告知内容	優先度
予定開始前告知：	優先度はその内容の優先度とする
指定された時刻に告知：	優先度－1
時報：	優先度－2

32b

[Drawing 3]



[Drawing 6]

31

開始時刻	終了時刻	内　容	優先度	アラーム
1997-03-31 10 : 00,	1997-03-31 12 : 00,	打合せ	0	1
1997-03-31 12 : 00,	1997-03-31 13 : 00,	昼食	0	1
1997-03-31 13 : 00,	1997-03-31 15 : 00,	会議	1	1
1997-03-31 15 : 00,	1997-03-31 17 : 00,	プレゼンテーション	2	1

[Drawing 14]

32

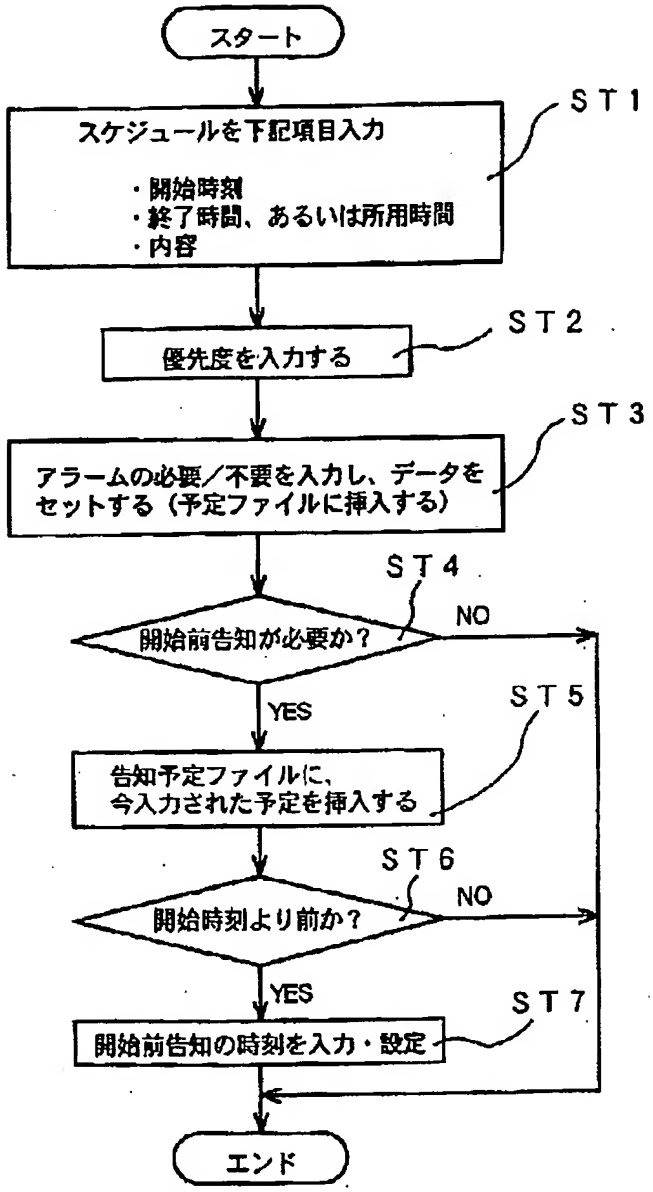
優先度テーブル	緊急（優先度1）	通常（優先度0）
プレゼンテーション	振動	LED
会　議	アラーム音	振動
デフォルト	アラーム音	振動

[Drawing 7]

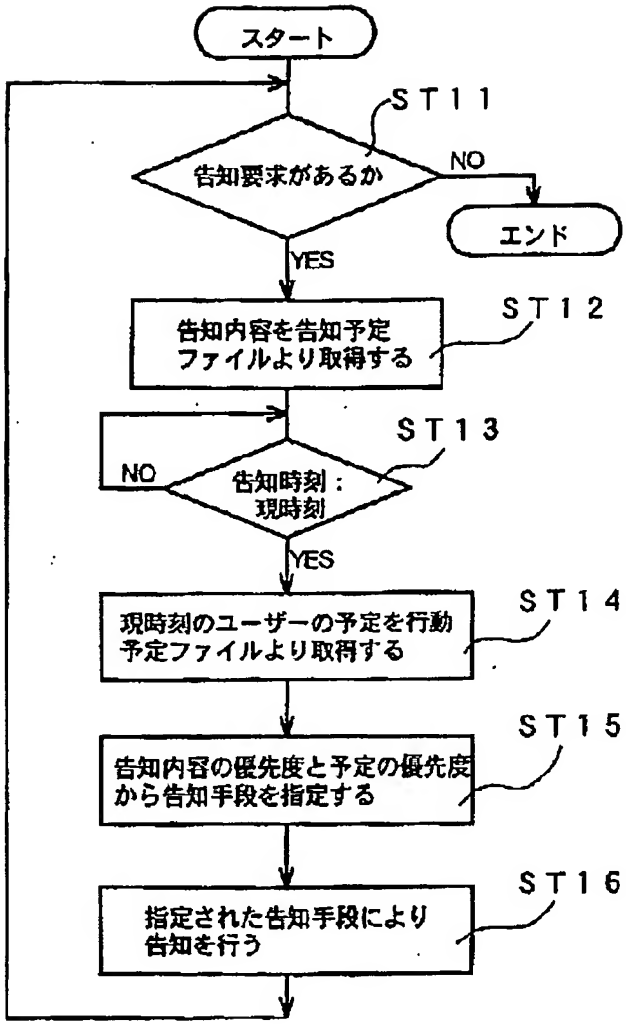
告知時刻	目　的	優先度
1997-03-31 11 : 55,	昼食,	−1
1997-03-31 12 : 00,	時報,	−2
1997-03-31 13 : 00,	時報,	−2
1997-03-31 14 : 00,	時報,	−2
1997-03-31 14 : 50,	プレゼンテーション開始,	2

30

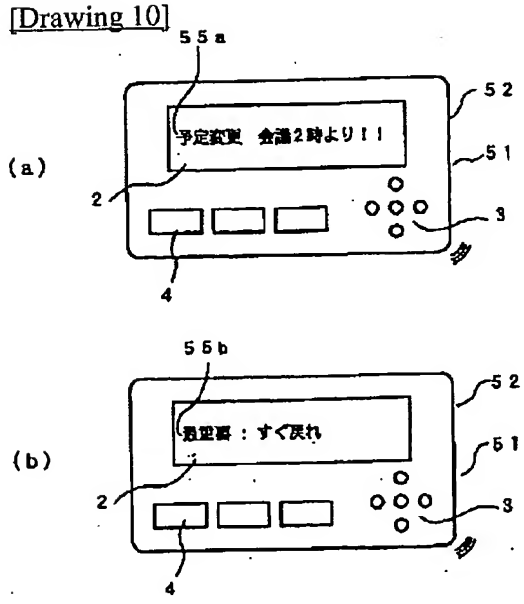
[Drawing 8]


スタート
スケジュールを下記項目入力
・開始時刻
・終了時間、あるいは所用時間
・内容
ST1
優先度を入力する
ST2
アラームの必要／不要を入力し、データをセットする（予定ファイルに挿入する）
ST3
ST4
開始前告知が必要か？
NO
YES
ST5
告知予定ファイルに、今入力された予定を挿入する
ST6
開始時刻より前か？
NO
YES
ST7
開始前告知の時刻を入力・設定
エンド

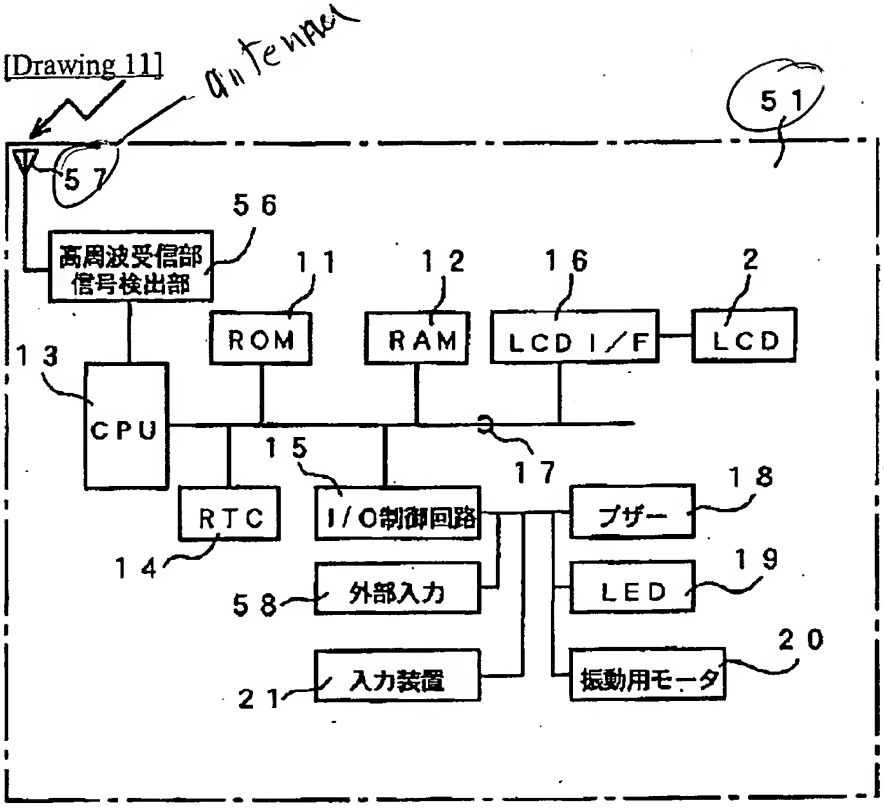
[Drawing 9]


スタート
ST11
告知要求があるか
NO
エンド
YES
告知内容を告知予定ファイルより取得する
ST12
ST13
NO
告知時刻：現時刻
YES
現時刻のユーザーの予定を行動予定ファイルより取得する
ST14
告知内容の優先度と予定の優先度から告知手段を指定する
ST15
指定された告知手段により告知を行う
ST16

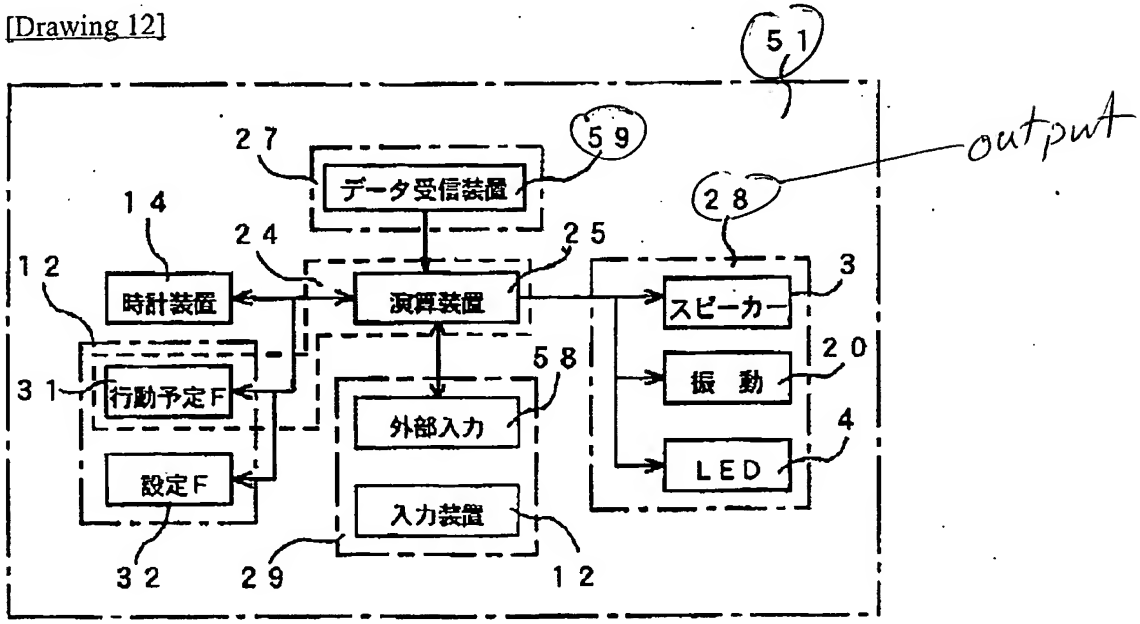
[Drawing 10]


(a)
55a
予定変更 会議2時より11
52
51
2
3
4
(b)
55b
52
51
2
3
4

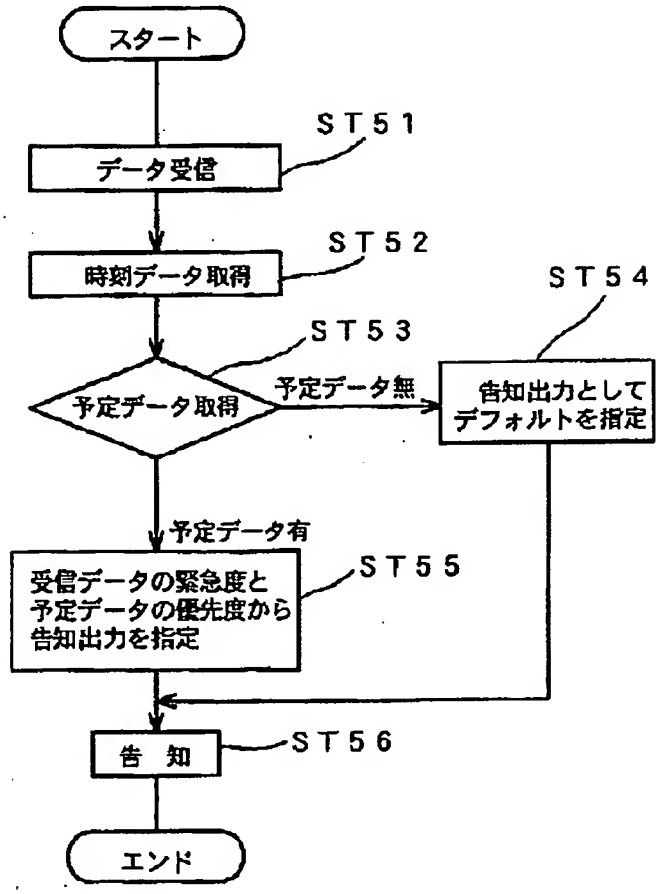
[Drawing 11]



[Drawing 12]



[Drawing 13]



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